1. **Course number and name**
   CptS 464: Distributed Systems Concepts and Programming

2. **Credits and contact hours**
   3 credits, 3 lecture hours

3. **Instructor's or course coordinator's name**
   David Bakken

4. **Textbook, title, author, and year**
   G. Coulouris, J. Dollimore, T. Kindberg, and G. Blair. 2011. *Distributed Systems: Concepts and Programming* (5th ed.). Addison Wesley. ISBN 0-13- 214301-1.

5. **Specific course information**
   a. *Catalog description:* concepts of distributed systems; naming, security, networking, replication, synchronization, quality of service; programming middleware.
   b. *Prerequisites or corequisites:* CPT S 223, 233, or E E 234, with a C or better; certified major or minor in Computer Science, Computer Engineering, Electrical Engineering, Software Engineering, or Data Analytics.

6. **Specific goals for the course**
   By the end of the course, students will be able to
   - Understand, analyze, and apply fundamental issues in distributed computing systems (1d,6a,6d).
   - Understand, analyze, and apply different system models: physical, architectural, failure (1d,6a,6d).
   - Understand, analyze, and apply above-the-socket mechanisms for communications between processes and objects(6a,6d).
   - Understand, analyze, and apply modern distributed communication styles including indirect communication and peer-to-peer systems (1d,6a,6d).
   - Be able to design, build, and test distributed applications using middleware while applying knowledge from above goals (1a,1b,1d,2a,2b,2c,2g,6a,6d).

7. **Brief list of topics to be covered**
   - Characterizations of of Distributed Systems
   - System Models
   - Interprocess Communication
   - Remote Invocation
   - Indirect Communication
   - Peer-to-Peer Systems
   - Time and Global States
   - Coordination and Agreement
   - Cloud, Fog, and Edge Computing